NPDES PERMIT NO. TX0007587
STATEMENT OF BASIS

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

I. APPLICANT

Chevron Phillips Chemical
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II. ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
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III. PREPARED BY

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IV. DATE PREPARED

August 14, 2006

V. PERMIT ACTION

The Environmental Protection Agency (EPA) has made a tentative determination, after consultation with the Railroad Commission of Texas (RRC), to reissue the permit previously issued October 12, 2001, modified December 20, 2004, with an expiration date of November 30, 2006.

Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed in Title 40, Code of Federal Regulations, revised as of January 30, 2006.

VI. CHANGES FROM THE PREVIOUS PERMIT

A. Report requirements for benzene have been removed.
B. A typographical error in the previous permit for total organic carbon has been corrected.
C. Sub-lethal effects have been added to the biomonitoring test.

VII. DISCHARGE LOCATION

As described in the application, the plant site is located at County Road 314, Brazoria County, Texas. Discharge from Outfall 001 is to the San Bernard River Tidal in Waterbody Segment Code No. 1301 of the Brazos Colorado Coastal Basin.

Outfall 001: Latitude 32° 45' 59" North, Longitude 100° 56' 57" West

VIII. APPLICANT ACTIVITY

Under Standard Industrial Classification (SIC) Code(s) 5171, the applicant currently operates a salt dome storage facility for light petroleum hydrocarbons. Brine is used to displace the hydrocarbons and is discharged when the dome is filled with the hydrocarbons. The wastewater from Outfall 001 results from the direct operations of the salt dome storage operations. The discharge is intermittent.

IX. RECEIVING STREAM STANDARDS

The general criteria and numerical criteria which make up the stream standards are provided in the Texas Administrative Code (TAC), 30 TAC Sections 307.1 - §307.10, effective August 17, 2000.

This waterbody, the San Bernard River Tidal in Waterbody Segment Code No. 1301, is designated for contact recreation and high quality aquatic life under the State's water quality standards (WQS).

X. EFFLUENT CHARACTERISTICS

The facility has provided effluent data, and the following pollutants were tested and concentrations were above minimum analytical levels (MAL):

Outfall 001

Parameter	(mg/l unless noted)
pH (standard units, su) Minimum	6.4 su
pH (standard units, su) Maximum	7.8 su
Biochemical Oxygen Demand (BOD_5)	<2
Total Organic Carbon (TOC)	6.5
Total Suspended Solids (TSS)	145
Ammonia, as N	0.224

Sulfate	1140
Fluoride	<200
Nitrate	<0.2
Oil and Grease	<5
Boron	0.153
Magnesium	41.2
Manganese	0.063
Benzene	24 ug/l

XI. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

The proposed effluent limitations for those pollutants proposed to be limited are based on regulations promulgated at 40 CFR 122.44. The draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR 122.44(a), on best professional judgment (BPJ) in the absence of guidelines, and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent.

A. REASON FOR PERMIT ISSUANCE

It is proposed that the permit be issued for a 5-year term following regulations promulgated at 40 CFR 122.46(a).

Comment [COMMENT1]: If the permit is for a 5-year term, citation should be 40CFR§122.46(a)

A permit application was received on June 6, 2006, and was deemed administratively complete on July 31, 2006.

B. OPERATION AND REPORTING

The permittee must submit monthly Discharge Monitoring Report's (DMR's) monthly, beginning on the effective date of the permit, lasting through the expiration date of the permit, to report on all limitations and monitoring requirements in the permit.

C. TECHNOLOGY BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR122.44(a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines (ELG's) where applicable, on BPJ in the absence of guidelines, or on a combination of the two.

The previous permit established technology-based limitations for total organic carbon (TOC), oil and grease (O&G) and pH. TOC is 20 mg/l monthly average and 30 mg/l daily maximum, O&G 10 mg/l monthly average and 15 mg/l daily maximum and pH limits of 6-9 su's. Those limitations will be retained in the draft permit.

It needs to be noted that the original technology-based limits in the draft permit publically noticed March 5, 2001, was chemical oxygen demand (COD) of 180 mg/l monthly average and 360 mg/l daily maximum, and not TOC. In comments made by the applicant during the public comment period, the permittee commented that COD was not an appropriate test due to the high

concentration of chlorides and requested that TOC be used instead. EPA agreed and in the Response to Comments dated August 20, 2001, EPA established the TOC limits 20 mg/l monthly average and 30 mg/l daily maximum. The final permit issued October 12, 2001, however, contains a typographical error. The parameter was changed in the permit from COD to TOC, but not the numerical limits. The error will be corrected in the draft permit and TOC shall be limited to 20 mg/l monthly average and 30 mg/l daily maximum.

Consistent with the previous permit, the draft permit will not propose mass limits for the technology-based limitations TOC and O&G, since the flow is variable and intermittent. Concentration limits will be protective of the stream uses. Also consistent with the previous permit, monitoring frequencies for pH, TOC and O&G are maintained at the same frequency of once/week.

D. WATER QUALITY SCREENING

1. General Comments

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR 122.44(d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant. If the discharge poses the reasonable potential to cause an in-stream violation of narrative standards, the permit must contain prohibitions to protect that standard. Additionally, the Texas Surface Water Quality Standards (TWQS) found at 30 TAC Chapter 307 states that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Implementation of the Texas Commission on Environmental Quality Standards via Permitting" (ITWQS) is designed to insure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to insure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

2. Reasonable Potential - Procedures

Methods for the determination of permit requirements; limits, no limits or reporting requirements, are contained in the ITWQS. Wasteload allocations (WLA's) are calculated using estimated effluent dilutions, criteria outlined in the TWQS, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentrations that can be discharged and still meet instream criteria after mixing with the receiving stream. From the WLA, a long-term average (LTA) is calculated, for both chronic and acute toxicity, using a log-normal probability distribution, a given coefficient of variation (0.6), and either a 90th or a 99th percentile confidence level. The 90th percentile confidence level is for discharges to rivers, freshwater streams and narrow tidal rivers with

upstream flow data, and the 99th percentile confidence level is for the remainder of cases. For facilities that discharge into receiving streams that have human health standards, a separate LTA will be calculated. The implementation procedures for determining the human health LTA use a 99th percentile confidence level, along with a given coefficient of variation (0.6). The lowest of the calculated LTA's; acute, chronic and/or human health, is used to calculate the daily average and daily maximum permit limits.

Procedures found in the ITWQS for determining significant potential are to compare the reported analytical data either from the DMR history and/or the application information, against percentages of the calculated daily average water quality-based effluent limitation. The more stringent of the calculated water quality based effluent limitations are compared against analytical data included with the permit application. Permit limitations are required when analytical data reported in the application exceeds 85% of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70%, but is less than the 85% used to determine permit limits, of the calculated daily average water quality-based effluent limitation.

The discharge via Outfall 001 is to the San Bernard River Tidal in Waterbody Segment Code No. 1301 of the Brazos Colorado Coastal Basin. The Texas Commission on Environmental Quality (TCEQ) water quality assessment section (WQAS) has determined that the discharge must support marine aquatic criteria for wide-tidal waterbodies.

4. Reasonable Potential - Calculations

a. TOXICS

The permittee provided effluent data for toxics. Data that was greater than the MAL is shown in the table above in Section X of this document. The only pollutant in the list that has applicable WQS is benzene. Benzene was evaluated against applicable WQS and is shown in the attached TEXTOX model. The TEXTOX run shows that benzene poses no reasonable potential, to exceed WQS. The previous permit had benzene as a "Report" pollutant. Based on the above, further reporting of benzene is not warranted, and the "Report" requirement will be removed in the draft permit. The permit will have a standard reopener clause however that will allow this or other pollutants or narrative permit limitations to be placed in the permit if new or remanded WQS are developed.

b. pH

San Bernard River Tidal in Waterbody Segment Code No. 1301 has pH requirements of 6.5-9.0 su's. These are instream standards. The dilution afforded the discharge by the low-flow is sufficient enough that the technology-based limitations for pH of 6-9 su's will be protective of applicable segment specific WQS.

c. Narrative Limitations

Narrative protection for aesthetic standards will propose that surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life. The following narrative limitations in the proposed permit represent protection of water quality:

"The effluent shall contain no visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse."

E. TECHNOLOGY BASED VERSUS WATER QUALITY STANDARDS BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at 40 CFR122.44(l)(2)(ii), 122.44(d), and 130.32(b)(6), the draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR122.44(a), on the results of or on State Water Quality Standards and requirements pursuant to 40 CFR122.44(d), or on the results of an established and EPA approved Total Maximum Daily Load (TMDL), whichever are more stringent.

Numerical technology-based limitations have been placed in the permit for pH, O&G and TOC. Narrative limits have been placed in the permit for the water quality protection due to oil and grease resulting in a sheen on the water or banks.

F. WHOLE EFFLUENT TOXICITY LIMITATIONS

Routine whole effluent toxicity (WET) tests conducted after the permit effective date of December 1, 2001, exhibited toxicity at the 8% critical dilution. A toxicity reduction evaluation (TRE) was performed in May 2002. The TRE showed the toxicity was from excessive chlorides in the effluent. Due to operational concerns, the chlorides cannot be reduced in the effluent. The TRE showed that toxicity was virtually eliminated when the critical dilution was less than 5%. The permit modifications requested in 2004 were based on these findings.

In the permit modification request, the permittee determined that limiting the discharge to a critical dilution (CD) of 5% or less would be the cost-effective way to achieve compliance with the WET requirements of the permit. The modified permit required an upstream river flow gauge to be constructed. This gauge would measure the San Bernard River Tidal flow. The previous day's stream flow would be used to establish the effluent flow. The permit modified on December 20, 2004, established that any effluent flow greater than 5% of the previous day's 24-hour stream flow would be a permit violation. The facility also agreed to construct an additional surface impoundment that would provide for flow equalization between the stream flow and the facility flow to achieve the 5% CD during periods of low San Bernard River flow. The modified permit also provided that effluent flow greater than 4% CD would require that the facility commence monthly WET tests instead of quarterly. The requested modifications and compliance schedule end on the last day of the modified permit, November 30, 2006.

The draft permit will maintain the WET testing requirements from the "Final Limitations" section of the modified permit issued December 20, 2004. The facility will be required to submit quarterly 7-day chronic biomonitoring tests for the remainder of the permit. The draft permit will not authorize monitoring frequency reductions for this permit cycle. The draft permit maintains the additional WET testing when the ratio of effluent discharge to stream flow exceeds 4%. If the ratio of discharge to stream flow is greater than 4%, the facility must conduct a 7-day chronic test for that month. Sampling for this monthly test must commence no later than 24-hours after the 4% ratio has been exceeded. EPA acknowledges that this 24-hour sampling initiating requirement may push this actual WET sampling event into the next calendar month, or even into the next quarterly reporting period, and in that event, the permittee shall report the WET sample results no later than the next month's DMR report (one-month later than the flow event that triggered the 4% test). The facility shall make note on the DMR form the month that the 4% exceedance occurred. Additionally, in the event that during the quarter such a monthly WET test has occurred, that WET test may be used to satisfy the required quarterly WET test. However, if the quarterly WET test has already been performed, and later during that same quarter an exceedance of the 4% rate occurs, then an additional WET test shall be required for each and every month that the flow exceeds the 4%. Once a 4% dilution WET test has been performed, any additional discharges during that SAME calendar month that exceeds the 4% threshold do not need additional WET testing. A single monthly WET test is all that the permit requires, except in those occurrences when a WET test for the quarterly requirement has been performed, and then later in the same month a 4% WET test is required.

Failure of a WET test may result in a WET limit for lethal effects. Since the permittee has already performed a TRE for lethal effects, the draft permit does not include a TRE for lethal failures. Additionally, the draft permit will propose that in the event of sub-lethal failures, a TRE for sub-lethal effects may be required. A compliance schedule may be proposed ONLY for sub-lethal effects.

Based on the critical dilution of 5%, the 75% dilution series for the biomonitoring shall be 2%, 4%, 5%, 7%, and 9% with 5% as the critical dilution.

The following WET tests shall be included in the draft permit:

EFFLUENT CHARACTERISTIC	DISCHARGE MONITORING	
	MONTHLY AVG MINIMUM	7-DAY MINIMUM
Whole Effluent Toxicity Testing		
(7-Day Static Renewal)		
Menidia beryllina	REPORT	REPORT
Mysidopsis bahia	REPORT	REPORT

EFFLUENT CHARACTERISTIC	MONITORING REQUIREMENTS	
	FREQUENCY	TYPE
Whole Effluent Toxicity Testing		
(7-Day Static Renewal)		
Menidia beryllina	1/Quarter	24-Hr. Composite
Mysidopsis bahia	1/Quarter	24-Hr. Composite

G. FINAL EFFLUENT LIMITATIONS

See the draft permit for limitations.

H. MONITORING FREQUENCY

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity 40 CFR 122.48(b) and to assure compliance with permit limitations 40 CFR 122.44(i)(1). The monitoring frequencies are based on BPJ, taking into account the nature of the facility and the previous permit. The draft permit will retain the same monitoring frequencies as the current permit for flow, stream flow rate and discharge percent of stream flow.

Comment [LG2]: previous permit, past compliance history and the current permit conditions.

If needed

XII. 303(d) LIST

The San Bernard River Tidal in Waterbody Segment Code No. 1301 is not on the "2004 Texas 303(d) List" approved by EPA May 8, 2006. If the waterbody is listed at a later date, and a total maximum discharge loading determined for the segment, the standard reopener clause would allow the permit to be revised and additional pollutants and/or limits added.

XIII. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, http://ifw2es.fws.gov/EndangeredSpecies/lists/, nine species in Brazoria County are listed as endangered or threatened. Five aquatic species are the green sea turtle, *(Chelonia mydas)*, hawksbill sea turtle, *(Eretmochelys imbricate)*, Kemp's ridley sea turtle, *(Lepidochelys kempii)*, leatherback sea turtle, *(Dermochelys coriacea)* and the loggerhead sea turtle, *(Caretta caretta)*. The other four species are avian; the American bald eagle, *(Haliaeetus leucocephalus)*, piping plover, *(Charadrius melodus)*, whooping crane, (*Grus americana)*, and the brown pelican, *(Pelecanus occidentalis)*.

In the previous permit, those nine species along with the West Indian manatee were listed. The West Indian manatee has since been removed from either threatened or endangered status in the current list. Since the previous permit was modified, there have been no additional pollutants added, and the environmental baseline has not changed. Based on those facts, EPA has reviewed the available information regarding impacts of this action on listed species and designated critical habitat. EPA has determined that the issuance of this permit will have "*no effect*" on listed threatened and endangered species.

XIV. CERTIFICATION

The permit is in the process of certification by the Railroad Commission of Texas following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XV. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XVI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(S)
EPA Application received June 6, 2006.

B. 40 CFR CITATIONS
Sections 122, 124, 125, 133, 136

C. MISCELLANEOUS REFERENCES

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.10 (21 TexReg 9765, August 17, 2000).

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION, ETC.

E-mail from Joy Birsinger, ChevronPhillips, August 7, 2006, to Larry Giglio, EPA, presenting additional pollutant data.

E-mail from Joy Birsinger, ChevronPhillips, August 9, 2006, to Larry Giglio, EPA, presenting additional TOC data.